RESULTS

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One hundred cases underwent CT examination, were selected & classified into two main groups to perform CT guided percutaneous. Intervention technique in order to evaluate the validity & accuracy in the clinical practice.

Group (A) :

Guided biopsy of the pelvi-abdominal masses (n = 60).

Group (B) :

Guided aspiration & drainage of pelvi-abdominal collection (n=40).

Table (1) : Sex distribution of the studied cases :

Technique / Sex	Biopsy group		Aspiration group		Total	
	No.	%	No.	%	No.	%
Male	35	58.3	16	40.0	51	51
Female	25	41.7	24	60.0	49	49
Total	60	100.0	40	100.0	100	100
Test of significance	$X2 = 3.23$			$P = 0.07$		

The table show no statistical significance between the two studied groups concerning their sex.

Table (2) : Range of age among the studied patients :

Age	Biopsy group	Aspiration group
Range	3-80	15-70
Mean	43-5	39.5
$\pm$ S.D	18.7	15.9
Test of significance	T = 1.11	P = 0.27

The patient ages ranged between 3-80 years in group A with mean age 43.5 while range between 15-70 years in group B with mean age 39.5 years old meaning no statistical significance in both studied groups.

Table (3) : Clinical presentation of the studied patients

Clinical presentation	Biopsy group		Aspiration group		Total		Z	P
	No.	%	No.	%	No.	%		
- Pain	7	11.7	40	100	47	47.0	8.67	0.0000
- Fever	-	-	35	87.5	35	35.0	8.99	0.0000
- ABD mass	8	13.3	6	15.0	14	14.0	0.24	0.43
- Weight loss	25	41.7	3	7.5	28	28.0	3.43	0.0001
- Backache	10	16.7	6	15.0	16	16.0	0.22	0.41
- Obstructive jaundice	2	3.3	-	-	2	2.0	1.17	0.12
- Postoperative	1	1.7	8	20	9	9.0	3.14	0.0001
- Incidental findings	7	11.7	-	-	7	7.0	2.24	0.013

Weight loss is the most presenting compliant for group (A) with high statistical significance, while in group (B) the most common presenting symptome was pain with high statistical significance.

N.B. :

Z-test it is test of significance for the difference between 2 groups dependent upon their percentage & number.

Table (4) : Anatomical distribution of pelvi-abdominal lesions detected by CT examination (Group A & B) :

Anatomical	No.	%
- Liver.	36	36.0
- Gall bladder & billary system.	8	8.0
- Epigastrium.	4	4.0
- Spleen.	2	2.0
- Subphrenic spaces.	5	5.0
- Retroperitonium.	22	22.0
- Renal & per-renal.	5	5.0
- Pancreas.	3	3.0
- L. Ns.	8	8.0
- Paravertebral.	6	6.0
- Indeterminate originn	8	8.0
- Iliac fossae and pelvis	15	15.0
Total	100	100.0

Thirty-six focal hepatic lesions were selected for CT intervention technique (22) cases in retroperitoneum (8) cases for GB & biliary tree (8) cases of indeterminate origin while 15 cases in iliac fossae and pelvis.

Table (5) : Distribution of CT guided percutaneous techniques done for the studied group :

Technique	No.	%
A. Biopsy group (no = 60)		
- Automated biopsy gun	55	91.7
- Manual needle	5	8.3
A. Aspiration group (n = 40)		
- One step drainage	17	42.5
- Catheter drainage	23	57.5
Total	100	100.0

Concerning the biopsy group automated biopsy gun was used in 91.7% of cases while manual needle was used in 8.3% of cases in aspirated group catheter drainage was performed in 57.5% of cases while and step needle aspiration was done for 42.5% of cases.

Table (6) : Different biopsy approaches (Group A)

Anatomical site	No.	%
- Posterior	10	16.7
- Lateral	15	25.0
- Anterior	30	50.0
- Anterolateral	3	5.0
- Posterolateral	2	3.3
Total	60	100.0

Anterior approach for biopsy was the commonest approach done for 50% of cases while posterolateral approach was the least approach done for 3.3% of cases.

Table (7) : Diagnostic rate for cases of biopsied pelvi-abdominal masses (Group A)

Final diagnosis	No. of cases	No. of cases correctly diagnosed by biopsy	Diagnostic rate %
- Hepato-biliary	29	2	6.9
- Pancreatic	2	1	50.0
- Splenic	2	1	50.0
- Retroperitoneal	5	1	20.0
- L. Ns.	8	1	12.5
- Paravertebral	5	-	0
- Indeterminate	2	1	50.0
Total	53	7	11.7

The diagnostic rate for pancreatic & splenic biopsies was higher 50% than other anatomical sites.

Table (8) : Comparison between the guided drainage technique & therapeutic success (Group B) :

Drainage technique	Successful		Not successful		Total	
	No.	%	No.	%	No.	%
One step method	13	38.2	4	66.7	17	42.5
Catheter drainage	21	61.8	2	33.3	23	57.5
Total	34	85.0	6	15.0	100	100
Test of significance	X2 = 1.69			P = 0.19		

The success of catheter drainage was 61.8% while that of one step drainage was 38.2% test of significance $x_2 = 1.69$, p = 0.19 (which are significant).

Table (9) : Histopahtological results of pelvi-abdominal masses according to representation and others (Group A).

Histopahtological	Representative		Non representative		Total	
	No.	%	No.	%	No.	%
- Liver	29	50.0	-	-	29	48.3
- Stomach	2	3.4	-	-	2	3.3
- L.N.	7	12.2	-	-	7	11.7
- Retroperitonal	5	8.7	1	50.0	6	10.0
- Vertebral	5	8.7	-	-	5	8.3
- Billary	2	3.4	-	-	2	3.3
- Pancreas	2	3.4	1	50.0	3	5.0
- Colon	2	3.4	-	-	2	3.3
- Spleen	2	3.4	-	-	2	3.3
- Indeterminate	2	3.4	-	-	2	3.3
Total	58	96.7	2	3.3	60	100

From the histopahtological point of view 96.7% of biopsies were representative while 3.3% were not.

Table (10) : Results of cyto-pathology among the pelvi-abdominal collections (Group B) :

Cyto-pathology	No.	%
- Pus	26	65.0
- Bile	7	17.5
- Serous fluid	1	2.5
- Sterile pus	4	10.0
- Gelatinous material	2	5.0
Total	40	100.0

65% of the aspirate revealed purulent materials these were aspirated from liver, pelvis, subphrenic, lumbar & subhepatic regions as well as psoas muscles :

- Bile was aspirated from 17.5% of cases (postoperative bilomas).
- Serous fluid: 2.5% of cases.
- Sterile pus: 10% of cases under broad spectrum antibiotic.
- Gelatinous material: 5% of cases.

Table (11) : Validity and peredictive value of CT guided biopsy technique & result of histopathology (group A) :

| CT. guided biopsy | Histopathology | | | | Total | |
| | Malignant | | Non malignant | | | |
	No.	%	No.	%	No.	%
Malignant	49	100.0	0	0.0	49	81.7
Non malignant	0	0.0	11	100.0	11	18.3
Total	49	81.7	11	18.3	60	100

Sensitivity = 100%   Specificity = 100%

Positive predictive value = 100%   Negative predictive value = 100%

The validity & predictive value for CT guided biopsy technique for detection of malignant & non malignant lesions were 100% with 100% specificity & 100% sensitivity.

Table (12) :   Validity and predictive therapeutic value of CT guided drainage technique in comparison to the results of histopathology in group B :

CT. guided drainage	Cyto-pathology				Total	
	Purulent		Not purulent			
	No.	%	No.	%	No.	%
Turbid collection	34	100.0	0	0.0	34	85.0
Clear fluid	0	0.0	6	100.0	6	15.0
Total	34	85.0	6	15.0	40	100

Sensitivity = 100%   Specificity = 100%

Positive predictive value = 100%   Negative predictive value = 100%

CT is highly accurate for assessment of fluid filled spaces. It can briskly guide the technique to get sample from fluid aspirate that is sufficient for reliable cytopathology with outcome indices of 100% predictive & 100% specificity & sensitivity.

Table (13) : Comparison between CT guided technique in regard to the success of biopsy and drainage (Group A&B) :

	Biopsy group		Aspiration group		Total	
	No.	%	No.	%	No.	%
Successful	58	96.7	37	92.5	95	95
Unsuccessful	2	3.3	3	7.5	5	5
Total	60	100.0	40	100.0	100	100
Test of significance	X2 = 0.88			P = 0.35		

Shows more feasibility of the guided drainage technique of success rate 92.5% while that of biopsy technique 96.7%. Bit higher precluded by unexperienced pathologists & patient non cooperation.

Table (14) : Complications of CT guided biopsy & drainage technique (group A & B) :

Techniques / Complication	CT biopsy (n= 60)		Drainage (n = 40)		Total	
	No.	%	No.	%	No.	%
Non cooperation	1	1.7	1	2.5	2	2.0
Cellulitis	-	-	2	5.0	2	2.0
Vagal reaction	1	1.7	-	-	1	1.0
Dissemination	1	1.7	-	-	1	1.0
Hemothorax	-	-	-	-	-	-
Absent	57	94.9	35	87.5	92	92
Septicemia/bacteraemia	-	-	-	-	-	-
Accidental removal	-	-	-	-	-	-
Rectus abdominus hematomia	-	-	2	5.0	2	2.0

No encountered major complication for both CT guided techniques minor complication in 3.4% of cases in biopsy guided technique varies from in cooperation to vagal reaction while 7.7% of cases show local percutaneous dissemination 5% of cases of drainage procedures shows rectus abdominus hematoma while another 5% of cases shows cellulitis & 2.5% patents non cooperation.

Table (15) : Cytopathological diagnosis on CT guided biopsy group (A) :

Site	No.	%
Epithelial malignancy	40	66.7
Lymphoma	6	10.0
Other malignancy	7	11.7
Metastatic	2	3.3
Benign	2	3.3
Inflammatory	3	5.0
Unsatisfactory	-	-
Total	60	100

Most of cases (66.7%) of shows epithelial malignancy while 5% of cases shows inflammatory process & pseudomass lesion.

Table (16) : Follow up of studied patients with pelvi-abdominal collection in group B :

Follow-up	No.	%
- Resolution of collection	34	85.0
- Surgery	4	10.0
- No follow up	2	5.0
Total	40	100.0

85% of cases underwent successful percutaneous drainage with resolution of abscess cavities & clinical improvement through 2weeks follow up study.

10% of cases were surgically underlying billiary tree injury & recurrence while 5% of cases escaped follow up study.

Table (17) : Follow-up of studied patients with pelvi-abdominal masses in group A :

Site	No.	%
- Resolution	4	6.7
- Surgery	5	8.3
- Radio or chemotherapy	39	65.0
- No follow up	12	20.0
Total	60	100.0

65% of cases were subjected for radiotherapy regimen, 8.3% underwent surgical procedures, 4% shows complete resolution after therapy as inflammatory pseudomass lesion while 20% of cases escaped follow up.